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Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Methods for Verifying Compliance With E911 Accuracy Standards	))	ET Docket No. 99-300
Revision of the Commission's Rules To Ensure Compatibility With Enhanced 911 Emergency Calling Systems	)))	CC Docket No. 94-102

COMMENTS OF BELL ATLANTIC MOBILE, INC.

Bell Atlantic Mobile, Inc. (BAM) provides the following comments on developing methods for measuring the accuracy of Enhanced 911 (E911) systems designed to locate wireless callers. *First,* BAM is concerned that the Public Notice seeking comments[1] is ambiguous on whether its purpose is to develop information to assist standards groups in developing guidelines that *may* be used to measure compliance, or to set compliance standards. The Bureau and OET should confirm that no mandatory standards are being considered. *Second,* BAM recommends that test methods be adopted only once Phase II location technologies are more fully developed, focus on a type-acceptance approach, and be both flexible and technically neutral, because this will encourage a variety of competing location solutions.

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1 Public Notice, "Information Sought on Methods for Verifying Compliance With E911 Accuracy Standards," DA 99-2130 (rel. October 8, 1999).

I. OET AND THE WIRELESS BUREAU SHOULD CLARIFY THAT THE PURPOSE OF THIS EFFORT IS TO HELP TO DEVELOP VOLUNTARY TESTING GUIDELINES.

Throughout the underlying E911 proceeding, the Commission has consistently emphasized that specific technical standards are best determined by cooperative efforts of PSAPs, consumer groups, standards setting bodies, carriers, and equipment vendors – not by the Commission as binding rules. As it recently said in its *Third Report,*[2] "The best way to ensure implementation of E911 services is to determine what capabilities must be achieved, *rather than micromanaging the process by prescribing detailed technical and operational standards.* As a result, the Commission declined to adopt specific methods for measuring compliance with the E911 rules, relying instead upon the parties to resolve technical issues in good faith." The Commission then noted that this process is underway, and is working: "Parties have responded by working collaboratively to resolve a number of technical issues associated with Phase II E911. Specific methods for verifying compliance are currently being explored by standards-setting and other technical bodies."[3]

Given these findings, the *Third Report* directed the Wireless Bureau and the Office of Engineering and Technology to "work along with all interested parties" in the effort to develop technical guidance "on appropriate methods for determining

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2 *Revision of the Commission's Rules To Ensure Compatibility With Enhanced 911 Emergency Calling Systems , Third Report and Order,* CC Docket No. 94-102, FCC 99-245 (rel. October 6, 1999).

3 *Id.* at ¶¶ 83-84 (emphasis added).

compliance with the location accuracy requirements."[4] BAM read this as a direction to Commission Staff to "lend a hand" to the industry efforts that were already well under way, to help resolve various complex technical and measurement issues. The testing guidelines "*may* be used" to verify compliance, but would *not* be mandatory standards or rules, because this would be "micromanaging the process by prescribing detailed technical and operational standards."[5]

The Public Notice, however, is unclear on what is to be the end result of the Bureau/OET effort. It notes on page 1 that the information sought "will be used to develop *guidelines* for test procedures," but on page 2, states that the purpose is to develop "verification *standards*." (Emphasis added.) These terms, of course, have very different meanings in Commission practice. On page 4, the Public Notice states that the plan is "for *the Commission* to develop a test procedure," suggesting that the full Commission will take some action, possibly the adoption of rules. Moreover, this concluding statement of purpose makes no reference to joint development of testing guidelines with interested parties.

It is important that the Bureau and OET clarify that the purpose of this effort is to assist in the development of voluntary testing guidelines only. The Commission has concluded that technical standards are best developed by standards groups in cooperation with interested parties, but the Public Notice

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4 *Id.* at ¶ 85.

5 Id. at ¶¶ 83-85.

suggests that the Commission may do so unilaterally. Even more seriously, it appears to indicate that mandatory "standards" will be adopted – which cannot lawfully occur without a Notice of Proposed Rulemaking adopted by the full Commission that advises the public that the Commission may adopt such rules.

BAM thus asks that OET and the Bureau issue a clarifying notice that confirms that any test procedures that are developed will be voluntary, and will be the result of work accomplished through standards bodies. This is not only called for by applicable legal procedures, but is the right policy. Development of Phase II E911 location technologies is occurring at rapid pace; new entrants are announcing solutions, and BAM is regularly receiving proposals from vendors of both handset and location-based systems. The clear lesson from the Commission's experience with Phase II is that adopting specific rules may prove unwise in the long run, because those rules can constrain the development of competing and equally effective systems. That lesson should not be lost here by adopting highly specific test procedures that may soon be overcome by advances in location technology or, worse, that may impede and frustrate those advances.

II. TEST METHODS SHOULD BE CONSIDERED ONCE LOCATION SOLUTIONS ARE MORE DEVELOPED, SHOULD FOCUS ON TYPE-ACCEPTANCE, AND SHOULD BE TECHNICALLY NEUTRAL.

BAM is concerned that the rapid track that the Notice has set for adopting test methods may disserve effective development of Phase II location technologies. The Commission has just recognized that setting detailed technical guidelines can

impede and frustrate innovation and development of improved technologies.[6] This is equally true of testing for Phase II location solutions, which are rapidly evolving. The Notice gave PSAPs and other interested parties less than three weeks to come up with detailed information. It is not clear why the process must be expedited to this degree, given that carriers are not required to deploy location technologies until 2001. Moreover, haste in developing test methods, particularly to the level of detail contemplated by the Bureau and OET, may have the unfortunate effect of driving the industry toward solutions that may meet the particular test methods, but are not the best solutions for effective long-term Phase II E911 service to the public.

Test methods should follow the technology, not the other way around. BAM urges that OET and the Bureau use the information that is provided to work with standards-setting groups and, if appropriate, set a deadline for those groups to complete work, but not to adopt methods unilaterally. In other recent proceedings requiring resolution of technical matters, the Commission decided to refer those matters to standard-setting bodies rather than unilaterally adopt standards itself. For example, the Commission declined to adopt specific additional "capability" standards to meet the requirements of the Communications Assistance for Law Enforcement Act (CALEA). Instead, it referred this task to TIA, and directed TIA to report back in seven months. The Commission determined that its proper role

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6 *Third Report and Order, supra,* at ¶¶ 83-85.

was merely to "monitor the development of the revised standard."[7] It is not clear why that reliance on standards groups is not being followed in this proceeding, which presents equally complex technical and issues.

Test methods must also be sufficiently flexible to allow alternative location technologies to develop. For this reason, BAM recommends against a precisely defined statistical model. (Notice at 2.) Wireless systems vary greatly in coverage area, geography, and the radio frequency environment. There are also significant differences in the impact of certain variables between handset solutions and network-based solutions. Statistical models can better be developed and refined once developments in location technology are further along.

BAM is also concerned with the Notice's apparent assumption that location technology testing will be done by carriers in the field. This is a sharp departure from the way the Commission has approached implementation of many previous wireless technologies. In those cases the Commission has relied on the standard-setting and type acceptance process to ensure that equipment meets desired performance characteristics. Manufacturers and equipment vendors are in the best position to obtain necessary certifications and demonstrate that the equipment they

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7 *Communications Assistance for Law Enforcement Act, Third Report and Order,* CC Docket No. 97-213, FCC 99-230 (rel. August 31, 1999), at ¶ 128. The Commission found that "technical requirements can be most effectively implemented by permitting [TIA] to make the modifications." *Id.*

produce meets Commission-imposed performance standards such as the 100 meter/300 meter location accuracy standard for Phase II E911. It is not apparent why that approach is not the right one here. Lab testing or other testing at the design and manufacturing stage can and should be done as part of the process to obtain certifications for location equipment and technologies, just as it is done for new wireless handsets and transmitters. The Notice, however, pays little attention to lab testing and the well-established equipment review process.

In implementing other rules governing the wireless industry, the Commission has frequently relied on predictive models rather than field studies. For example, the areas that a cellular carrier is deemed to serve are determined by applying a predictive model based on cell site parameters to calculate the 32 dBu contour. Actual field strength measurements are not taken. The Commission found that "the formula approach is beneficial and represents as good a measure of cellular system coverage as any other model available for public use," and would "simplify and remove a measure of uncertainty" in determining coverage.[8] Here, however, the Bureau and OET appear to have given short shrift to using this approach and instead focus on actual measurements in the field.

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8 *Amendment of Part 22 of the Commission's Rules to Provide for Filing and Processing of Applications for Unserved Areas in the Cellular Service and to Modify Other Cellular Rules, Second Report and Order,* CC Docket No. 90-6, 70 RR 2d 847 at ¶¶ 8-10 (1992).

To the extent that field testing may be conducted, a test plan area must be sufficiently flexible to allow carriers to test its defined market area or an integrated wireless system once a solution is deployed throughout that system. For example, BAM operates its cellular system in the Washington, D.C. region through a single integrated system of cell sites and switches. BAM should be able to deploy Phase II location capability in that region or in areas where PSAPs are able to receive Phase II information, if that is the most effective and efficient way to provide Phase II capability. It would also be unwise to set rigid test methods that are based on arbitrary county or state boundaries that do not correspond to a wireless system.[9]

Some test parameters identified in the Public Notice may favor a particular solution and should not be adopted. In the *Third Report,* however, the Commission made it clear that it would seek to avoid taking any actions that were not technically "neutral" toward competing technologies.[10] The last two questions on

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9 A jurisdictional breakdown would require separate tests for Maryland, Virginia and the District, which bears no relationship to the way BAM's system is integrated (a single switch, for example, serves multiple jurisdictions). A MSA/RSA license area breakdown would require BAM to conduct eight separate tests in eight parts of a single integrated system. Other carriers serving the same market have different system configurations. It is thus impractical for the Commission to attempt to specify rigid rules for what locations should be covered by a test plan.

10 "We reiterate that in revising our rules to permit handset-based solutions to meet our Phase II requirements our intent is not to mandate the use of any particular technologies, only to allow the broadest range of technologies a reasonable opportunity to compete while taking appropriate steps to enhance public safety. . . . The Commission's Rules were intended and expected to be technologically and competitively neutral." *Third Report* at ¶¶ 32, 34.

page 2 of the Public Notice reveal this problem. For example, the use of a rectangular grid of cells may favor a handset-based solution over a network-based solution. Such a distribution of test points would excessively weight areas with few E911 calls. Test calls in outlying rural areas would receive equal weighting with test points in urban areas. The test would not be representative of the actual call distribution. Conversely, test locations based on a given distance from a base station may unduly favor a network-based solution.

CONCLUSION

The development of testing methods for Phase II E911 location compliance testing should be a cooperative effort between standards bodies, interested parties and the Commission. BAM must depend on equipment vendors to provide it with the capability to meet the mandate for Phase II, and is actively exploring both current and new alternatives for Phase II compliance. Methods that require actual field tests would unjustifiably depart from the use of the type acceptance process or predictive models, and would severely limit a carrier's choice. A detailed testing methodology may favor one vendor's solution over another. Developing flexible test methods through the standards process will best ensure that competing location

technologies will be available to wireless carriers, so that the Commission's Phase II E911 goals can be achieved.

Respectfully submitted,

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